REMARKS

Applicants thank Examiner Han for her careful attention to this application.

I. Claim Objections

Claims 22-32, 46, 47 and 48 have been cancelled.

Claim 38 now depends from claim 36.

II. Section 102 Rejections

The Examiner rejected claims 1, 33, 39, 40, 41 and 52 as anticipated by Beasley (U.S. Patent 5,796,216).

The MPEP states:

> A claim is anticipated only if each and every element as set forth in the claim is found, either expressly or inherently described, in a single prior art reference." *Verdegaal Bros. v. Union Oil Co. of California*, 814 F.2d 628, 631, 2 USPQ2d 1051, 1053 (Fed. Cir. 1987). "When a claim covers several structures or compositions, either generically or as alternatives, the claim is deemed anticipated if any of the structures or compositions within the scope of the claim is known in the prior art." *Brown v. 3M*, 265 F.3d 1349, 1351, 60 USPQ2d 1375, 1376 (Fed. Cir. 2001) (claim to a system for setting a computer clock to an offset time to address the Year 2000 (Y2K) problem, applicable to records with year date data in "at least one of two-digit, three-digit, or four-digit" representations, was held anticipated by a system that offsets year dates in only two-digit formats). See also MPEP § 2131.02.< "The identical invention must be shown in as complete detail as is contained in the ... claim." *Richardson v. Suzuki Motor Co.*, 868 F.2d 1226, 1236, 9 USPQ2d 1913, 1920 (Fed. Cir. 1989). The elements must be arranged as required by the claim, but this is not an *ipsissimis verbis* test, i.e., identity of terminology is not required. *In re Bond*, 910 F.2d 831, 15 USPQ2d 1566 (Fed. Cir. 1990). Note that, in some circumstances, it is permissible to use multiple references in a 35 U.S.C. 102 rejection. See MPEP § 2131.01

Beasley shows a circuit for powering an HID lamp. The operating frequency of the oscillator can be varied. Col. 3, lines 5-10. As the examiner noted, the PWM generates a feedback signal for changing the frequency of the oscillator. Col. 7, lines 17-25. Thus, the controller does not change the resonant frequency of the tank circuit, but rather changes the frequency of the drive signal.

On the other hand, the independent claims of the instant application refer to changing the resonant frequency of the tank circuit, not the frequency of the current. Changing the resonant frequency of the tank circuit allows the power transfer to be controlled.

A. Claim 1

Claim 1 requires a controller for dynamically reconfiguring the tank circuit. The patent application defines "tank circuit" as a part of circuit including a capacitor and an inductor. This is, of course, nothing more than the common definition for a tank circuit.

Beasley does not show reconfiguring of the tank circuit. Rather, Beasley simply shows that the frequency of the current through the tank circuit can be changed. Thus, Beasley does not show a controller capable of reconfiguring the tank circuit. Thus, claim 1 is not anticipated by Beasley.

B. Claim 33

Claim 33 requires a controller coupled to a sensor for configuring the tank circuit. As stated above, Beasley does not configure the tank circuit. Rather, it changes the frequency of the current through the tank circuit.

C. Claim 39

Claim 39, as amended, says that the tank circuit has a variable element for changing the resonant frequency of the tank circuit, a sensor for detecting power transfer efficiency from the tank circuit, and a controller responsive to the sensor for changing the resonant frequency by changing the variable element if the power transfer efficiency is reduced.

Beasley does not change the resonant of the tank circuit. Rather, Beasley changes the frequency of the current through the tank circuit. This claim is not anticipated by Beasley.

D. Claim 40

Claim 40 is a method of operating a contactless power supply to power a load. A tank circuit supplies power to the load. The resonant frequency of the tank circuit is changed in response to an operating parameter of the tank circuit.

As stated previously, Beasley changes the frequency of the current through the tank circuit. It does not change the resonant frequency of the tank circuit.

E. Claim 41

Claim 41 is dependent on claim 40. The claim adds the limitation that the frequency of the power supplied to the tank circuit is varied in response to the changes in the operating parameter.

This claim is also allowable over Beasley.

F. Claim 52

Claim 52 requires a controller configuring the tank circuit to operate at a first resonant frequency if an operating parameter is within the nominal range, but configuring

the tank circuit with a controller to operate at a second resonant frequency if the operating parameter is outside of the nominal range.

The device shown in Beasley changes the frequency of the current flowing through the circuit. However, it does not change the configuration of the tank circuit. Thus, Beasley does not anticipate claim 52.

III. Section 103 Rejections

Several claims were rejected by the examiner under 35 U.S.C. §103(a) as obvious due to Beasley in view of Kenney (U.S. 3,590,382).

Beasley does not show configuration of a tank circuit. It shows only the modification of a frequency. Thus, combining Beasley with any other reference does not produce the claimed subject matter of the instant application.

Further, Kenney is a wireless transmitter. A variable inductor and a variable capacitor are manually set to determine the frequency of operation for the circuit. Col. 3, lines 60-65.

While obviousness may be found by combining references, absent a suggestion to combine the references, such combination is inappropriate. *Texas Instruments Inc. v. U.S. Int'l Trade Comm'n*, 988 F.2d 1165, 26 USPQ2d 1018 (Fed. Cir. 1993). It is insufficient that the prior art discloses the component of the claims sought to be patented. A teaching, suggestion or incentive to make the combination is required for a combination of the art to demonstrate obviousness. *Northern Telecom, Inc. v. Datapoint Corp.*, 908 F.2d 931, 15 USPQ2d 1321 (Fed. Cir. 1990). The mere fact that references can be combined or modified does not render the resultant combination obvious unless

the prior art also suggests the desirability of the combination. *In re Mills*, 916 F.2d 680, 16 USPQ2d 1430 (Fed. Cir. 1990).

There is no suggestion to combine Kenney with Beasley. Beasley has a method of changing the frequency of the circuit. Therefore, the use of an ancillary tank circuit to adjust the frequency of the circuit would be redundant.

Further, Kenney teaches that a variable inductor and a variable capacitor can be used to set the frequency for a transmitter. However, there is no carrier signal in Beasley, and thus one skilled in the art would not understand how to use the circuitry shown in Kenney in the circuit shown in Beasley.

More generally, Kenney teaches that a variable inductor and a variable capacitor can be used to change the frequency of operation of the circuit. The circuit shown in Beasley already has a circuit to control the frequency of operation of the circuit. If Kenney were combined with Beasley, one skilled in the art would use the variable inductor/capacitor arrangement of Kenney to control the frequency of the current flowing through the tank circuit. There is nothing in Kenney to even remotely suggest that the inductor/capacitor arrangement be used to supply power to a device.

Claim 3 requires that a controller be connected to the variable capacitor in order to dynamically reconfigure the tank circuit. On the other hand, the variable inductor/capacitor arrangement of Kenney is manually adjusted. Col. 3, lines 60-65. There is no controller connected to the variable inductor/capacitor. Thus, even if Kenney and Beasley were combined, the limitations of this claim would not be met.

Claims 34 and 35 are likewise not obvious in view of Beasley and Kenney. Claim 34 as amended requires that the controller be coupled to the variable capacitor for

adjusting the capacitance of the variable capacitor. Claim 35 requires that the controller be coupled to the variable inductor for adjusting the inductance of the variable inductor. No controller is shown in Kenney, and thus the claims are not obvious from the two references.

Claims 36, 37 and 38 depend from claim 35 and thus are not obvious from Beasley and Kenney.

Claims 4-32, 42-51 and 53 were rejected as obvious due to Beasley, Kenney and Venkitasubrahamian et al (U.S. 5,808,422).

As to claims 4-8, the claims depend from claim 3 and therefore are likewise allowable.

Claim 9 says that the power source has a rail voltage and the rail voltage is alterable by the controller. None of the references suggest or show that the rail voltage of the power source is alterable by the controller. The rail voltage of Venkitasubrahamian et al is maintained constant as is the rail voltage shown in Beasley (see Fig. 19 and the label "DC Rail").

Claim 10 is allowable as it depends from claim 9.

Claim 11 states that the inverter has a duty cycle, and the controller varies the duty cycle of the inverter. None of the references show that the inverter duty cycle can be varied. Thus, this claim is allowable.

Claim 12 is allowable as it depends from claim 11.

Claim 13 has been amended to depend from claim 1. Claim 13 says that the controller is coupled to a variable inductor and the controller can change the inductance

of the variable inductor. None of the patents cited by the examiner show a controller capable of changing the inductance of a variable inductor.

Claims 14, 15, 16 and 17 are allowable because they depend from claim 13.

Claim 19 is allowable in that the controller is capable of changing the rail voltage. None of the references show or suggest a controller capable of changing the rail voltage.

Claim 20 is allowable as it depends from claim 19.

Claim 21 requires that the duty cycle of the inverter be changeable by the controller. None of the references show a controller capable of changing the duty cycle of the inverter.

Claim 42, depending from claim 41, also requires that the inverter have a duty cycle, and the duty cycle is change in response to changes in the operating parameter. None of the references show an inverter where the duty cycle may be varied.

Claim 43 requires that the rail voltage be changed in response to changes in an operating parameter. Again, none of the references cited by the Examiner have an adjustable rail voltage.

Claim 44 requires changing the adjustable capacitor. This resonant frequency of the tank circuit is adjusted in response to changes of the operating parameter. The tank circuit shown in the Kenney reference is manually adjusted, and therefore is not adjusted in response to an operating parameter.

Similarly, claim 45 has an adjustable inductor, and the resonant frequency of the tank circuit is changed by changing the inductance of the inductor in response to an operating parameter. This also is not shown in Kenney.

Claims 46 and 47 have been cancelled.

In claim 48, the rail voltage of the DC power source is changed in response to an operating parameter. This is not shown in any of the references cited by the Examiner.

Claim 49 says that the operating parameter is phase. This element, in combination with the other elements, is not shown in the cited patents.

Claim 50 requires that an operating parameter be monitored and that the duty cycle of the inverter is changed if the operating parameter is outside of the nominal range. This is no shown in any of the cited patents.

Claim 51 is allowable because it depends from claim 50.

Claim 53 depends from claim 52. It includes the elements of operating the inverter at a first inverter frequency if the operating parameter is nominal, but operating the inverter at a second inverter frequency if the operating parameter is not nominal. This claim is allowable as it depends from Claim 52.

Claim 54 was rejected as obvious due to Beasley, Kenney, Venkitasubrahamian et al and Wert (U.S. 5,272,615). Applicants first note that four references have been combined in order to reject this claim. The Examiner has picked bits and pieces out of each of the references in order to construct a device. However, a person skilled would not piece the references together to obtain the device in the claim.

First, the Wert reference uses digital controls to generate a low distortion sine wave. (Col. 1, lines 37-42). However, none of the references cited even suggest that a low distortion sine wave is desirable. Thus, combining the references is not suggested by either of the references.

The device shown in Wert does not store the operating parameter in the memory as a first operating value when the tank circuit is configured to operate at the first resonant frequency.

Claim 55 further includes a decision step. Nothing in Wert suggests or shows a decision step to operate at a first operating value or a second operating value.

As to claim 56, nothing in Wert suggests or shows the storing of the first operating value in memory as an expected operating value. Thus, the claim is allowable over the cited art.

[The remainder of this page is intentionally blank.]

CONCLUSION

In view of the above amendments and these remarks, Applicants respectfully submit that the present application is in condition for allowance. A notice to that effect is earnestly and respectfully requested.

Respectfully submitted,

DAVID W. BAARMAN

By: Warner Norcross & Judd LLP

J. Ray Wood
Registration No. 36,062
111 Lyon Street, N.W., Suite 900
Grand Rapids, MI 49503-2487
PHONE: 616.752.2167

#1247940